

TRANSAS

Quick Start Guide

Class B Transponder

Class B Transponder Quick Start Guide

Congratulations on your purchase of the TRANSAS Class B Transponder. We strongly recommend your transponder is fitted and configured by a professional installer. For detailed operating instructions please refer to the user manual.

Before you start

You will need the following items and tools to complete the installation.

- TRANSAS Class B Transponder
- Marine VHF antenna & mount
 - Please refer to the user manual for detailed antenna specifications
- Marine GPS antenna (active type) & mount
 - Please refer to the user manual for detailed antenna specifications
- PC running Microsoft Windows XP® / Windows 2000® / Windows Vista®
- TRANSAS proAIS software
- Access to 12V power supply
- Data connector (Male 9 way D-Type, e.g., RS 489-2437)
- Power and NMEA data connector (Female 9 way D-Type, e.g., RS 489-2487)
- Four M5 screws or fixings appropriate to the mounting location

If you plan to connect your transponder to a stand alone chart-plotter or other equipment using the NMEA 0183 interface:

- A power and data lead as shown in Figure 3

If you plan to connect your transponder to a PC serial port:

- Power and data leads as shown in Figure 34

Note that the unit requires only a power supply to operate once installation is complete, however a data connection will be required during installation to allow the unit to be configured.

If your antennas are supplied without cable:

- Coaxial cable for each antenna (RG-58)
- Connector for GPS antenna
- Connector for VHF antenna
- Male BNC connector (e.g., RS 112-1675)
- Male TNC connector (e.g., RS 546-5216)

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Locating the unit

The unit should be mounted such that the LED's are visible and the front panel switch and connectors are accessible. The unit can be mounted in any orientation.

Things to consider:

- Routing power to the unit
- Routing Antenna cables to the unit
- Routing data connections from the unit to other equipment

Keep unit at least 0.5m from magnetic compass.

Figure 1 gives an overview of the installation requirements.

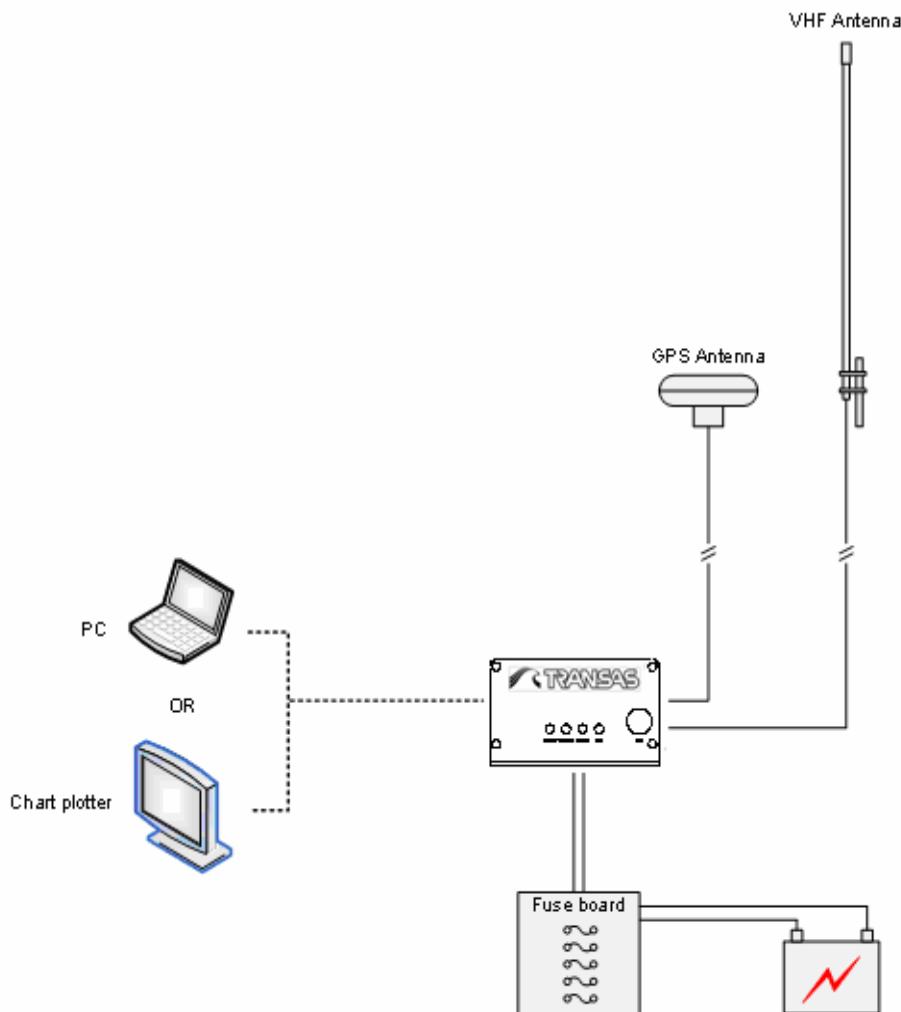


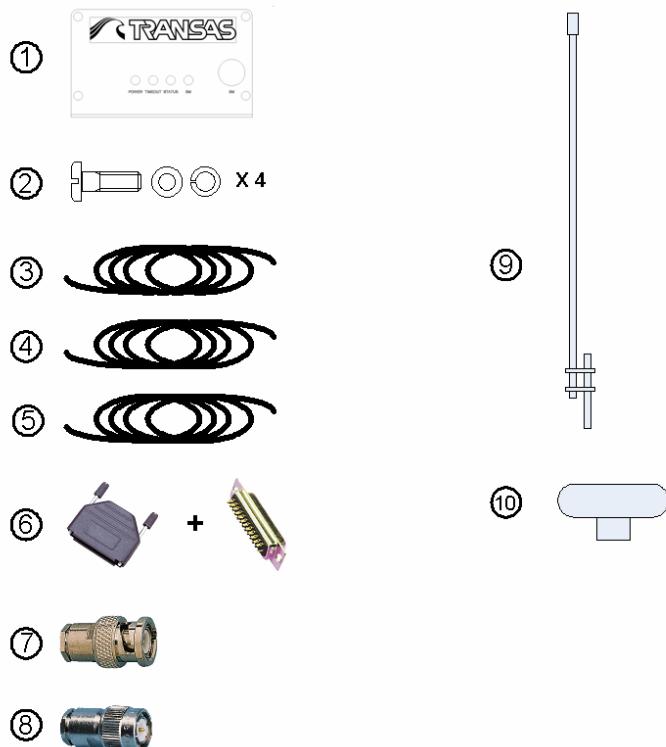
Figure 1 - Installation overview

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Installation pre-requisites

The components required for installation are shown in Figure 2.



1	Transas ClassB AIS Transponder
2	Four M5 crews, spring washers and plain washers to fix unit to vessel
3	RG-58 low loss co-axial cable for VHF and GPS antennas
4	Power+NMEA cable, 9p D-sub male
5	Data cable, 9p D-sub male-female
6	9 p D-Type female connector and hood
7	Male BNC connector
8	Male TNC connector
9	VHF antenna
10	GPS antenna

Figure 2 - Required components

*If the antennas (items 9 and 10) are provided with cables and connectors of the correct type then items 3, 7 and 8 may not be required.

Depending on NMEA data connection item 6 may not be required.

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Installation steps

1. Fix GPS and VHF antennas to vessel according to manufacturers instructions.

Please make sure the GPS antenna is mounted away from the VHF antenna and any other transmitting antennas (e.g., radar)

2. Run GPS and VHF cables to transponder location

3. Run power from fuse board to transponder location

Please observe the polarity of the power supply connections. If connected via a fuse board the unit should be fed from a 5A fuse,

4. Fix transponder unit to vessel.

5. Add BNC connector to VHF antenna cable*

6. Add TNC connector to GPS antenna cable*

If antennas are provided with cables and the correct connector type then this stage is not required. Please observe manufacturers instructions when adding TNC or BNC connectors to co-axial cable to ensure a good connection.

7. Add power and data connections to 9 way D type connectors.

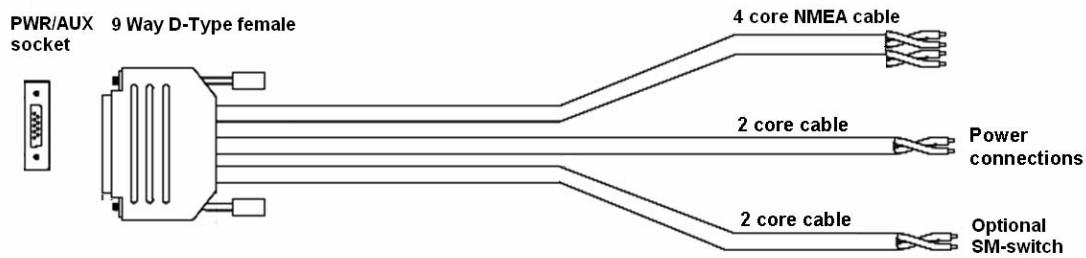
Refer to Figure 3 or Figure 4 for cable assembly instructions and wiring diagrams.

8. Connect GPS, VHF and power to the unit .

9. Now proceed to configure the unit

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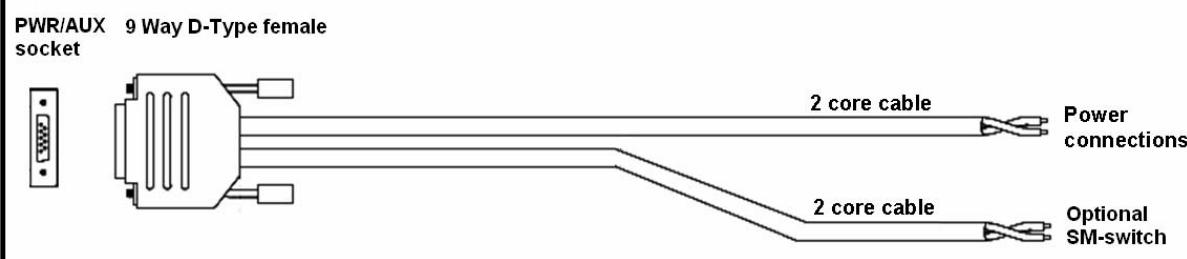


9 Way D-Type male socket pin number	Power connections
9	Positive power connection RED/BROWN wire
5	Negative power connection BLACK/BLUE/WHITE wire
	NMEA connections
7	RxB
6	RxA
2	TxB
1	TxA
	Optional SM connections
4	
3	

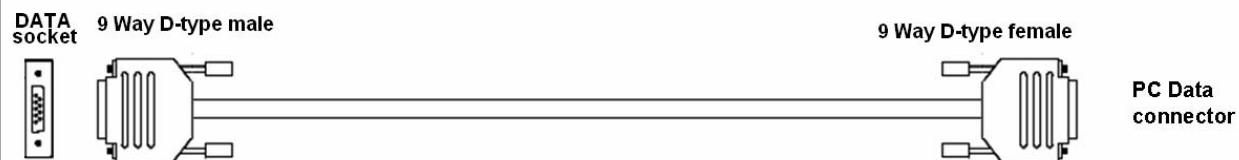
Figure 3 - Power and NMEA data cable diagram
Optional connection of external SM-switch

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9 Way D-Type male socket pin number	Power connections
9	Positive power connection RED/BROWN wire
5	Negative power connection BLACK/BLUE/WHITE wire
	Optional SM connections
4	
3	



9 Way D-Type female socket pin number	
2	DTx
3	DRx
5	Signal GND

Figure 4 - Power and data cables for PC connection
Optional connection of external SM-switch

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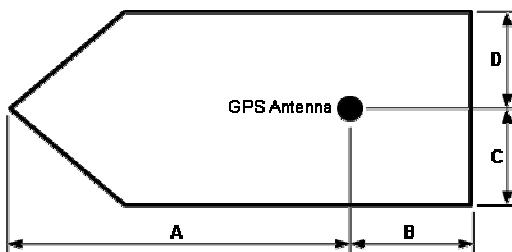
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Configuring the unit

The transponder must be configured before operation. Information about the vessel the unit is mounted on must be entered carefully as this data will be transmitted to other AIS users. This information is transferred to the unit by connecting to a PC.

You will need the following information:

- Name of the vessel
- Radio call sign of the vessel
- MMSI number of the vessel (Maritime Mobile Service Identity).
- If you do not have this information please check the vessel's radio licence or contact the relevant licensing authority*
- Dimensions of the vessel to the nearest meter, including dimensions to the GPS antenna as follows:
 - Dimension A = distance from bows to GPS antenna to nearest meter
 - Dimension B = distance from GPS antenna to stern to nearest meter
 - Dimension C = distance from port side to GPS antenna to nearest meter
 - Dimension D = distance from GPS antenna to Starboard side to nearest meter.
 - i.e., $A+B = \text{length of vessel}$ and $C+D = \text{width of vessel}$



- Type of vessel - this should be the best match from the list below:
 - 30 = Vessel - Fishing
 - 31 = Vessel - Towing
 - 32 = Vessel - Towing and length of the tow exceeds 200 m or breadth exceeds 25 m
 - 33 = Vessel - Engaged in dredging or underwater operations
 - 34 = Vessel - Engaged in diving operations
 - 35 = Vessel - Engaged in military operations
 - 36 = Vessel - Sailing
 - 37 = Vessel - Pleasure craft
 - 38 = Vessel - Reserved for future use
 - 39 = Vessel - Reserved for future use
 - 50 = Pilot vessel
 - 51 = Search and rescue vessels
 - 52 = Tugs
 - 53 = Port tenders
 - 54 = Vessels with anti-pollution facilities or equipment
 - 55 = Law enforcement vessels
 - 56 = Spare . for assignments to local vessels
 - 57 = Spare . for assignments to local vessels
 - 58 = Medical transports (as defined in the 1949 Geneva Conventions and Additional Protocols)
 - 59 = Ships according to RR Resolution No. 18 (Mob-83)

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Configuring the unit cont...

The unit should now be powered and connected to a PC via a serial port. Please refer to the TRANSAS proAIS application user guide (LD2342) provided with the proAIS software.

Follow the instructions provided in the 'Static Data' section of the proAIS user guide to enter the vessel information and to transfer to the AIS transponder.

Verifying correct operation

Once configured the installation should be verified as follows using the proAIS software.

1. Check that at least one of the LED's on the front of the unit is illuminated. If the red 'Error' LED is illuminated please refer to the troubleshooting section below.
2. Check that the unit has a good GPS lock. If the GPS is locked the Latitude and Longitude will be displayed on the GPS tab in proAIS along with a number of green bars in the signal strength graph. A good signal strength is indicated by bars over the 40 dBHz mark on the left hand axis.
3. If the unit does not have GPS fix within a few minutes check your GPS antenna has a clear view of the sky, is to the correct specification and that the GPS antenna cable is connected.
4. Check that the Green 'Power' LED on the front of the unit illuminates. This will not happen until the unit has GPS fix and has transmitted its first position report. **If the Green LED is illuminated you have successfully installed and configured the unit.** The proAIS application can be closed and the PC disconnected from the unit. The unit requires only a power supply to operate.
5. If you are in an area with other AIS equipped vessels you can check the "Other vessels" tab in proAIS to view position reports received from other ships.

Troubleshooting

If the green LED is not illuminated after around 5 minutes then please check the following:

1. Is the MMSI number programmed?

Check the diagnostics tab in proAIS. If there is a red cross next to the "Transponder MMSI Valid" item then you have not correctly configured the MMSI.

2. Does the unit have a GPS position fix?

Check the diagnostics tab in proAIS. If there is a red cross next to the "GPS position fix" item then the unit does not have GPS fix. Check your GPS antenna and connections.

3. Is the unit reporting any alarms?

Check the "Active alarms" area in the diagnostics tab of proAIS & refer to the troubleshooting guide at the back of the proAIS user guide.

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Connecting to other equipment

To get the full benefit from your AIS transponder it can be connected to a compatible chart plotter (or PC running compatible chart plotting software) for the display of AIS targets.

Example 1 - Raymarine® 'E Series' Display

The AIS transponder can be connected to a Raymarine® 'E-series' display via the NMEA 0183 interface. The connections between the AIS transponder and Display should be made as follows:

AIS Transponder 9 Way D-Type connector	Raymarine® NMEA 0183 cable
Pin 1 (TXA -)	Green wire (NMEA input -ve)
Pin 6 (RXA -)	Brown wire (NMEA output -ve)
Pin 2 (TXB +)	White wire (NMEA input +ve)
Pin 7 (RXB +)	Yellow wire (NMEA output +ve)

Note that wire colours refer to the Raymarine® NMEA 0183 cable as defined in the Raymarine® E-Series display installation manual (Raymarine® document number 87043_2)

The E-Series display should now be configured to the AIS baud rate. This setting is found under the "System integration setup menu" within the "NMEA port setting" menu item. Set the port to "AIS 38,400". To view AIS targets the AIS Layer must be enabled on either a Chart or Radar window. Please refer to Raymarine® documentation for further detail on AIS operation.

Example 2 - Garmin® 'GPSMAP 3206 / 3210'

The AIS transponder can be connected to a Garmin® GPSMAP 3206 / 3210 via the serial interface. The connections between the AIS transponder and GPSMAP should be made as follows:

AIS Transponder 9 Way D-Type connector	Garmin® 18 pin power / data harness
Pin 2 (TXD)	Brown wire (Port 1 data in)
Pin 3 (RXD)	Blue wire (Port 2 data out)
Pin 5 (GND)	Black wire (Ground)

Note that wire colours refer to the Garmin 18 pin power / data harness as defined in the Garmin GPSMAP 3206/3210 installation instructions.

The GPSMAP should now be configured to communicate with the AIS transponder. This can be set via the Main menu. Under the 'System' tab select the 'Comm' sub-tab and then select 'NMEA High speed' for the 'Port 1 setting'.

Display of AIS information is also configured via the main menu. Under the 'Map' tab select the 'AIS' sub tab and adjust the settings to 'Auto' for 'AIS Vessels'.

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